Accepted Manuscript

Environmental assessment of small-scale dairy farms with multifunctionality in mountain areas

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PII: S0959-6526(16)30043-9

DOI: 10.1016/j.jclepro.2016.03.001

Reference: JCLP 6832

To appear in: Journal of Cleaner Production

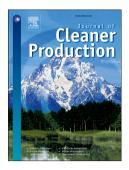
Received Date: 6 March 2015

Revised Date: 24 February 2016

Accepted Date: 1 March 2016

Please cite this article as: Salvador S, Corazzin M, Piasentier E, Bovolenta S, Environmental assessment of small-scale dairy farms with multifunctionality in mountain areas, *Journal of Cleaner Production* (2016), doi: 10.1016/j.jclepro.2016.03.001.

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11	
12	Abstract
13	The aim of this study was to estimate the environmental impact of organic and conventional small-
14	scale dairy farms in mountain areas. Sixteen farms rearing the dual-purpose Rendena breed were
15	assessed for global warming potential, acidification and eutrophication impacts through the Life
16	Cycle Assessment method in two scenarios: the Baseline Scenario based on the actual farm data and
17	the Milk-Beef production system Scenario assuming that calves exceeding the culling rate were
18	fattened directly on-farm. Three different emissions allocation methods were considered: No
19	allocation; Physical allocation, which also accounted for the co-product beef; and Economic
20	allocation, which also accounted for the ecosystem services provided by the farms and were
21	estimated on the basis of agri-environmental payments. Furthermore, two functional units were

used: fat and protein corrected milk (FPCM) and utilizable agricultural land (UAL). Within the

Baseline Scenario and with FPCM as the functional unit, performing No allocation, the mean values

obtained for the global warming potential, acidification and eutrophication were 1.43 kg CO₂-eq/kg

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